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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,535	09/01/2006	Roland Martin	MERCK-3224	2981

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EXAMINER

SMITH, JENNIFER A

ART UNIT	PAPER NUMBER
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1793

NOTIFICATION DATE	DELIVERY MODE
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09/27/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/591,535	Applicant(s) MARTIN, ROLAND	
	Examiner JENNIFER A. SMITH	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7,9-12,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,9-12,21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :07/13/2010, 08/17/2010, 09/08/2010.

DETAILED ACTION

Status of Application

Claims 3, 6, 8, and 13-20 are canceled.

Claims 1, 2, 4, 5, 7, 9-12, 21, and 22 are amended and presented for examination.

Information Disclosure Statements

The information disclosure statements (IDS) submitted on 07/13/2010, 08/17/2010, and 09/08/2010 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Claim Rejections - 35 USC § 112, 1st Paragraph, New Matter

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim is rejected under 35 U.S.C. 112, first paragraph as failing to comply with the description requirement thereof since the amendment to claims 21 introduces new matter not supported by the original disclosure. The original disclosure does not reasonably convey to a designer of ordinary skill in the art that applicant was in possession of the design now claimed at the time the

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application was filed. See *In re Daniels*, 144 F.3d 1452, 46 USPQ2d 1788 (Fed. Cir. 1998); *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981).

Specifically, there is no support in the original disclosure for the use of noble metal ore when mixed with the LCD components.

To overcome this rejection, applicant may attempt to demonstrate that the original disclosure establishes that he or she was in possession of the amended claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sumimoyo et al. (JP 2001-198565).

In regard to claim 1, the Sumimoyo is drawn to the treatment method for LCDs. LCDs are processed in a furnace and the products are separated into glass, metal, electronic parts and tar. The obtained glass and metal are reused and gold and other metals are taken out of the electronic parts [See Abstract]. The method taught by Sumimoyo et al. involves:

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a) discarded flat-panel display, which contains a LCD flat-panel display, a polarizing plate, a thin film semiconductor, and electronic parts which contain noble metals such as gold [See Paragraph 0008, 0015, 0016] are fed into a furnace

b) the LCD materials are heated such that pyrolysis happens between 873-923 K, melting the materials in the mixture [See Paragraph 0019]

d) the glass pieces from the liquid crystal panel collapse into pieces [See Paragraph 0021]

e) the metal, electronic, and glass parts are divided [See Paragraph 0026] and gold is recovered [See Paragraph 0016]

The Sumimoyo reference fails to teach an explicit “cooling step”, however, this would naturally flow from the description of the Sumimoyo reference. The LCD materials are heated in a gaseous atmosphere and after this heated gas passes through the reaction apparatus, the materials would cool to a temperature at or above room temperature.

In regard to claims 5 and 22, the material worked upon in the Sumimoyo reference discarded flat-panel display, which contains a LCD flat-panel display, a polarizing plate, a thin film semiconductor, and electronic parts [See Paragraph 0008]. These electronic parts are interpreted as “electronic scrap” for the purposes of examination.

Claims 7, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaida et al. (Japanese Patent Publication No. 2000-084531).

Claims 7, 9 and 12 are written in Jepson format. Drafting a claim in Jepson format (i.e., the format described in 37 CFR 1.75(e); see MPEP § 608.01(m)) is taken as an implied admission that the subject matter of the preamble is the prior art work of another.

In regard to claims 7 and 12, the Kaida reference teaches a method that includes feeding crushed liquid crystal panel displays into a nonferrous smelting furnace and heat treating to about 1200°C to form a melt. The LCDs that make up the crushed feedstock that is fed to the furnace of the Kaida reference contain metal elements such as indium tin oxide, chromium metals, tantalum, aluminum, or titanium which can be recovered and recycled [See Paragraph 0028 and 0029]. The Kaida reference teaches silica [furnace sand] contained in the LCD system is used to remove impurities from the furnace. Impurities (for example, iron) which exist in a non-iron refining furnace can be removed by supplying the crushed LCD material, since the liquid crystal panel contains SiO₂ to some extent [See Paragraph 0082].

In regard to claim 9, the Kaida reference teaches a method that includes feeding crushed liquid crystal panel displays into a nonferrous smelting furnace and heat treating to about 1200°C to form a melt. The LCDs that make up the crushed feedstock

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that is fed to the furnace of the Kaida reference contain metal elements such as indium tin oxide, chromium metals, tantalum, aluminum, or titanium which can be recovered and recycled [See Paragraph 0028 and 0029]. Glass contained in the crushed waste is used for iron removing treatment in the nonferrous smelting furnace (material recycling) and organic matter such as the polarizing plates and liquid crystals acts as combustion material [reducing agent] and is thermally recycled [See Abstract].

In regard to claims 4-5, the LCDs that make up the crushed feedstock that is fed to the furnace of the Kaida reference contain metal elements such as indium tin oxide, chromium metals, tantalum, aluminum, or titanium [See Paragraph 0028 and 0029].

Kaida et al. teach organic matters, such as a polarizing plate and a liquid crystal, are contained in a crushed liquid crystal panel and such organic matter serves as a combustion material. Therefore the furnace can be heated with energy savings [See Paragraph 0016].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaida et al. (Japanese Patent Publication No. 2000-084531).

In regard to claims 2 and 4, the Sumimoyo reference teaches heating the LCD materials are heated such pyrolysis happens between 873-923 K, thus melting the materials in the mixture [See Paragraph 0019]. A gasification reaction occurs downstream at about 1573 K (1300°C). It would be within the level of one of skill in the art to perform the gasification and pyrolysis steps separate or together and to choose the optimal range of process temperatures through routine experimentation.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaida et al. (Japanese Patent Publication No. 2000-084531) in view of Gaedcke et al. (US Patent No. 5,496,403).

In regard to claim 10, the Kaida reference teaches a method that includes feeding crushed liquid crystal panel displays into a nonferrous smelting furnace and heat treating to about 1200°C. Glass contained in the crushed waste is used for iron removing treatment in the nonferrous smelting furnace (material recycling) and organic matter such as the polarizing plates and liquid crystals acts as combustion material and is thermally recycled [See Abstract].

In regard to claim 10, the Kaida reference teaches heat treatment of LCDs in a furnace but does not teach the preferred furnace type.

Gaedcke et al. is drawn to a production process operated at 800-1400°C [See Column 1, lines 2—31] in a rotary type furnace [See Abstract].

One of ordinary skill in the art, at the time of Applicants' invention, would have been motivated to perform the LCD thermal treatment process taught in the Kaida reference in a rotary-type furnace because it is virtually impossible to obtain a uniform temperature over the entire layer thickness of a mixture using heated ovens, for example hearth-type, pusher-type and tunnel furnaces. Rotary furnaces do not have this disadvantage [See Gaedcke, Column 1, 31-40].

In regard to claim 11, the claimed process steps would inherently be present in the process taught by Kaida. Because the LCD material is heat treated in a similar

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manner, one of skill in the art would expect the presence of the "protective film" and the silicate-containing materials that are parts of the LCD raw material.

Response to Arguments

Applicant's arguments with respect to the prior art rejections of the claims have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendments to the claims necessitated the new grounds of rejection presented above.

Conclusion

Claims 1, 2, 4, 5, 7, 9-12, 21, and 22 are rejected.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. SMITH whose telephone number is (571)270-3599. The examiner can normally be reached on Monday - Thursday, 9:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/
Supervisory Patent Examiner, Art Unit 1793

/Jennifer.Smith/
Jennifer Ann Smith
September 20, 2010
Art Unit 1793